

**AMENDMENTS TO THE CLAIMS**

Claims 1-27 (Cancelled)

Claim 28 (Currently Amended): An isolated DNA molecule which comprises an expression system for the production of a calcium ion channel  $\alpha_1$  subunit protein which expression system comprises

a nucleotide sequence encoding a functional T-type, low voltage activated calcium channel  $\alpha_1$  subunit or the complement to said encoding nucleotide sequence, wherein said encoding nucleotide sequence comprises

(a) a nucleotide sequence encoding the amino acid sequence encoded by SEQ. ID.

NO: 18; or

(b) ~~the complement of a nucleotide sequence that hybridizes under conditions of medium hybridization stringency to the nucleotide sequence of (a).~~

Claims 29-34 (Cancelled)

Claim 35 (New) Recombinant host cells which are modified to contain the DNA molecule of claim 28.

Claim 36 (New): A method for producing a functional T-type calcium ion channel  $\alpha_1$  subunit protein which method comprises culturing the cells of claim 35 under conditions wherein said expression system produces said protein.

Claim 37 (New): A method for preparing cells which produce a functional T-type calcium ion channel  $\alpha_1$  subunit protein which method comprises introducing into said cells the DNA molecule of claim 28.

Claim 38 (New): An isolated DNA molecule which comprises an expression system for production of a calcium ion channel  $\alpha_1$  subunit protein fragment, which expression system comprises a nucleotide sequence encoding a T-type low voltage activated calcium channel  $\alpha_1$  subunit fragment or the complement to said encoding nucleotide sequence, wherein said encoding nucleotide sequence consists of the nucleotide sequence encoding the amino acid sequence encoded by SEQ. ID. NO: 18.

Claim 39 (New): Recombinant host cells which are modified to contain the DNA molecule of claim 38.

Claim 40 (New): A method for producing a functional T-type calcium ion channel  $\alpha_1$  subunit protein which method comprises culturing the cells of claim 39 under conditions wherein said expression system produces said protein.

Claim 41 (New): A method for preparing cells which produce a functional T-type calcium ion channel  $\alpha_1$  subunit protein which method comprises introducing into said cells the DNA molecule of claim 38.